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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/567,986

07/05/2007

Joseph Lanzarotta

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EXAMINER

CHEUNG, WILLIAM K

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

08/07/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/567,986	Applicant(s) LANZAROTTA ET AL.	
	Examiner WILLIAM K. CHEUNG	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
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| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. In view of the amendment filed April 13, 2009, new claims 11-13 have been added. Claims 1-13 are pending.
2. In view of the argument filed April 13, 2009, the rejection of Claims 4-8, 10 under 35 U.S.C. 112, second paragraph, is withdrawn. Further, the rejection of claims 8-10 under 35 U.S.C. 102(b) as being anticipated by Bataille et al. (US 2001/0051677), is withdrawn.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
4. Claim 13 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 13 (line 2), the recitation "sulfur" is not supported by the original specification filed.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-7, 11-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Bruck et al. (DE 3501 697).

- | |
|---|
| 1. (currently amended) A rubber composition comprising
a. <u>an elastomer selected from the group consisting of natural rubber, polyisoprene rubber, styrene butadiene rubber, polybutadiene rubber, butyl rubber, halobutyl rubber, ethylene propylene rubber, crosslinked polyethylene rubber, neoprenes, chlorinated polyethylene rubbers, silicone rubbers, thermoplastic rubber and mixtures thereof, and</u>
b. <u>at least a surfactant containing a thio functionality.</u> |
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| 4. (currently amended) An elastomer based rubber composition comprising per 100 parts of elastomer, and about 0.02-10 parts of a surfactant containing a thio functionality. |
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| 5. (currently amended) An elastomer based rubber composition comprising per 100 parts of elastomer, and about 0.02-10 parts of an thioether surfactant. |
|--|

Bruck et al. disclose a rubber composition which comprises (A)100 parts by weight of a mixture of butadiene-acrylonitrile copolymer with different acrylonitrile content and a terpolymer of ethylene, propylene, and a diene (ethylidenenorbornene or hexa-1,4-diene) and (B)10 parts by weight of a ether-thioether such as Vulkanol 85® as described in example 1. Applicants' specification seems to indicate that the claimed

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chemical structure (page 5, line 25-30) is the preferable embodiment, which can be obtained from Bayer Corporation.

Regarding the “functional groups” feature of claim 11, applicants must recognize that the nitrile group of butadiene-acrylonitrile copolymer possess a nitrile functional group.

Regarding the “reinforcing filler” of claim 12, Bruck et al. (page 6, line 13) clearly disclose 5 weight percent of ZnO.

The obtained co-vulcanizates are suitable as pipe coverings, conveyor belt coverings, or drive belts (p.5, 1.4-5). They show a good resistance to ozone (p.3, 1.6 ; p.5, 1.2 : p.10, 1.6). Consequently, the subject-matter of claims 1-7, 11-12 is anticipated.

Applicant's arguments filed April 13, 2009 have been fully considered but they are not persuasive. Applicants argue that Bruck et al. fail to teach the specific polymers of claim 1. However, the examiner disagrees because the terpolymer of ethylene, propylene, and a diene (ethylidenenorbornene or hexa-1,4-diene) of Bruck et al. meets the ethylene propylene rubber being claimed. Applicants must recognize that Bruck et al. (page 2, line 3; page 6, line 10; page 8, Table; Figures 1, 2, and 3) clearly the use of EPDM which an ethylene propylene rubber.

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Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claims 8-10, 12, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bataille et al. (US 2001/0051677) in view of Bruck et al. (DE 3501 697).

8. (currently amended) A vulcanized tire sidewall comprising based on 100 part of elastomer ~~and~~ about 0.02-10 parts of a surfactant containing a thio functionality.

9. (Currently amended) A tire comprising a vulcanized sidewall component comprising a ~~sulfur-containing surfactant~~ surfactant containing a thio functionality.

10. (Original) A method of forming a film on the exposed surface of vulcanized rubber, comprising;
adding about 0.02-10 parts of a surfactant containing a thio functionality to a rubber composition,

curing said rubber composition, exposing the cured rubber composition to ozone.
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Bataille et al. (page 7, claims 38-39) disclose a tire and the process for making the same, where the side walls of which comprise a vulcanized elastomer, and alkylsulfonic or alkylsulfuric acid (surfactant containing a thio functionality), in an amount of between 0.5 and 10 phr. Bataille et al. (page 2, 0027, Table) clearly teach the use of 1.5 phr of sulfur, 35 phr of natural rubber, and 60 phr of carbon black (fillers). The said process involves the exposing the tire side wall to ambient air having an ozone concentration (for curing) to form a film having a thickness of equal to or greater than 0.5 microns formed on the outer face of the sidewall.

The difference between Bataille et al. and claims 8-10, 12, 13 is that Bataille et al. are silent on a thio compound.

Bruck et al. discloses a rubber composition which comprises (A) a rubber and (B) an ether-thioether such as Vulkano185® (example 1). The obtained co-vulcanizates, suitable as pipe coverings, conveyor belt coverings, or drive belts (p.5, 1.4-5), show a good resistance to ozone (page 3, 1.6; page 5, 1.2; page 10, 1.6). Motivated by the expectation developing rubber composition with ozone resistance properties, it would have been obvious to the skilled in the art to incorporate the ether-thioether teachings of Bruck et al. into the rubber composition of Bataille et al. to obtain the invention of claims 8-10, 12, 13

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM K. CHEUNG whose telephone number is (571)272-1097. The examiner can normally be reached on Monday-Friday 9:00AM to 2:00PM; 4:00PM to 8:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David WU can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/William K Cheung/
Primary Examiner, Art Unit 1796

William K. Cheung, Ph. D.
Primary Examiner
August 5, 2009

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